

A History

of Southern Forest Science, Management, and Sustainability Issues

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The 13 Southern States from Virginia to Texas have a combined area of approximately 500 million acres. Our understanding of the complex cultural and ecological history of this large region is still evolving. It may be fair to say that until recently, our view of the native peoples of the South and the landscape in which they lived derived chiefly from reports provided by the few European explorers who traveled through this region between A.D. 1500 and A.D. 1700. Their factual descriptions were accurate, but their understanding of the native cultures and ecology was limited and this led to erroneous conclusions (Owen 2002).

Native Americans have lived in the South for about 10,000 years. Early estimates of pre-European population density, which were based on early English accounts, are now thought to be much too low (Carroll and others 2002). It is now believed that there were 1.5 to 2 million members of the Mississippian cultures living in the region in the year 1500. Diseases introduced by the Spanish explorers in the next 100 years greatly reduced the size of this population and resulted in the collapse of the Mississippian culture by 1600 (Carroll and others 2002). It is now thought that approximately two-thirds of the Native American population in the South was eliminated (Owen 2002). As a result, the large areas that had been used for farming and fire-managed forest lands throughout the South changed between 1600 and 1700 from “a mosaic of open pine and hardwood woodlands, prairies, meadows, and oak or pine savannas in a variety of successional stages” (Carroll and others 2002) to a forest that was much denser in both its overstory and understory (Owen 2002). It was this rapidly revegetating, dense forest with a large proportion of remnant old growth that the Europeans interpreted as

pristine wilderness largely untouched by human hands. This limited understanding of the ecological dynamics of the pre-European South found its way into our history books and has resulted in a distorted popular vision of what the natural southern forest ecosystem was and should be today.

The second chapter “Southern Forests: Yesterday, Today, and Tomorrow” by R. Neil Sampson focuses on the events that most strongly affected the land, forests, and people of the South between 1900 and the present. Until about 1880, European settlement and forest exploitation tended to be concentrated on flat lands adjacent to rivers. Thus we learn that a map of forest conditions in the South at that time clearly indicates the patterns of rivers, which show up as areas where all of the merchantable pine had been cut. The coming of the railroad opened up the interior South to economical forest harvesting, mining, and agriculture. The railroad was the key to getting products to market profitably. Between 1860 and 1920, 90 million acres of mature longleaf pine (*Pinus palustris* Mill.) stands were harvested (Barnett 2004). Land was cheap and plentiful, and this led to large-scale land speculation, timber exploitation, and finally resale of the denuded land to farmers. Large areas of marginal land, thus, came into cultivation or were used for grazing and then slowly abandoned as the soil was eroded and its fertility depleted. Copper and iron smelters sprung up in many areas of the South, and their acid fumes and fuel needs denuded thousands of acres of land. These deplorable conditions brought about the rise of the conservation movement around 1900; purchasing of unwanted land by the public to create the first national forests in the East; creation of the U.S. Department of Agriculture Forest Service and State forestry agencies; and the beginning of scientifically based forest management.

The third chapter “Southern Forest Resource Conditions and Management Practices from 1900–1950: Benefits of Research” by James P. Barnett tells the story of forest science

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during the first half of the 20th century. The most urgent needs between 1900 and 1930 were the reforestation of the millions of acres of cutover forest land and the control of wildfire on that land. In 1900 we had little scientific knowledge about reforestation. By 1933 when the Civilian Conservation Corps (CCC) was established to provide employment to some 3 million men, our reforestation knowledge and technology had advanced far enough so that we could use this manpower effectively in the first major effort to tackle our Nation's huge forest and soil conservation needs. "With only a handful of professional foresters and despite little technical support and primitive working conditions, forestry in the South has made tremendous gains" (Barnett 2004). This first half century of achievement in forest science provided the basic knowledge that forest managers have used to make the South's Coastal Plain the most productive timber growing region in the world and to restore the mountain South's deciduous hardwood forests, which have great ecological importance.

The story of forest science in the South continues in the fourth chapter, "Southern Forest Resource Conditions and Management Practices from 1950–2000: Benefits of Research," by Jacek P. Siry. The basic knowledge of forest management developed earlier was refined and, most importantly, implemented on a very large scale between 1950 and 2000. This chapter tells the story of the South's distinctive system of intensive planted pine management. Hardwood forests occupy more than half of the region's forest land, and management of hardwoods has received substantial research effort. However, there has been less research and investment in hardwood management than in pine management because hardwood management has been less profitable than pine management (Siry 2004).

In the 1950s, southern pines were managed primarily in natural stands and with low intensity. Even after the large CCC reforestation campaign, only 2 million acres had been planted in pine forests while 7 million acres were still classified as nonstocked and in need of reforestation (Siry 2004). By 1997, however, there were 30 million acres of pine plantations in the South. Pine management was intensifying rapidly and productivity was increasing continuously. By 2040, the area in planted pine is expected to expand to 54 million acres, mostly as a result of reforestation of abandoned agricultural land (Wear and Greis 2004). The South's planted and natural pine forests represent < 3 percent of global conifer

forest cover, and yet the region supplies nearly 19 percent of global industrial softwood harvests (Siry 2004). No other region or country in the world supplies more softwood timber than the U.S. South. This impressive success story is not widely known or appreciated by the people in the United States. It should be pointed out that the 30 million acres of pine plantations is still much less than the 90 million acres of longleaf pine forest in the South in 1900.

In the last quarter century, timber harvesting and development of land for urban uses has increased substantially in the South, leading to questions about the health, productivity, and sustainability of the South's forests (Wear and Greis 2004). The Southern Forest Resource Assessment was initiated in 1999 to address these concerns (Wear and Greis 2002). The final chapter entitled "The Southern Forest Resource Assessment: What We Learned" by David N. Wear and John G. Greis is a summary of the findings of this assessment.

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